

## عنوان مقاله:

The Effect of Adiponectin on Matrix Metalloproteinase-9 (MMP-9) in Vascular Smooth Muscle Cells

## محل انتشار:

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## خلاصه مقاله:

**Background & Aims:** Atherosclerosis is a major cause of morbidity and mortality. Adiponectin reduce the risk of heart disease, and matrix metalloproteinase-9 (MMP-9) is involved in the formation and development of atherosclerotic plaque. The aim of this study was the investigation of the effect of adiponectin on MMP-9 gene expression. It seems this hormone can reduce the risk of atherosclerosis by MMP-9 gene expression reduction. **Methods:** Human aorta smooth muscle cells were cultured in F12K media in appropriate environment and conditions, then, the cells were treated with 5 µg/ml adiponectin. After 24 and 48 hour, total RNA was extracted and corresponding cDNA was made. After drawing standard curve and determining the efficiency of the reaction, MMP-9 gene expression was measured by the SYBR Green kit and real time PCR method. Glyceraldehyde 3-phosphate dehydrogenase (GAPDH) gene was the reference gene. The amount of MMP-9 protein, compared to the β-actin protein as reference protein, was estimated with Western blot method. **Results:** adiponectin did not cause a change in gene expression of MMP-9 in 24 hours, but in 48 hours reduced gene expression (-1.1, and -5.5, respectively). As a result of MMP-9 gene expression reduction, protein also reduced after 48 hours compared to β-actin protein. **Conclusion:** Through the reduction of MMP-9 protein and gene expression, adiponectin changes extra cellular matrix which may reduce the risk and complications of atherosclerosis

## کلمات کلیدی:

Atherosclerosis, Adiponectin, Matrix metalloproteinase-9, Vascular smooth muscle cells

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